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Notice of Allowability

Application No.

10/811,112

Applicant(s)

SUPPER, DIPL.-ING. DANIEL

Examiner

Art Unit

Asok K. Sarkar

2891

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 9/22/2005.
2. ☒ The allowed claim(s) is/are 19-32 and 37-39.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>8/10/2004</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I claims 19 – 32 and 37 – 39 in the reply filed on 9/22/2005 is acknowledged.

Allowable Subject Matter

2. Claims 19 – 32 and 37 – 39 are allowed.
3. The following is an examiner's statement of reasons for allowance:

Claims 19 – 32 recite, inter alia, a method of producing a vertically emitting laser comprising forming a semiconductor layer stack over a substrate and processing the semiconductor layer stack, thereby forming a current aperture and a semiconductor relief associated with the vertically emitting laser, wherein an area of the current aperture and an area of the semiconductor relief are defined in a same processing operation. Ueki, US 2003/0235226 teaches an oxidation process for controlling the area of the current aperture, but fails to teach forming any relief portion with the same process or any other process. Additionally, the art of record does not disclose or anticipate the above limitation in combination with other claim elements nor would it be obvious to modify the art of record so as to form a device including the above limitation.

Claims 37 – 39 recite, inter alia, a method of producing a vertically emitting laser comprising forming an oxidizable current aperture layer over the substrate, forming a semiconductor intermediate layer over the current aperture layer, forming an oxidizable auxiliary layer over the semiconductor intermediate layer, forming a covering layer over the oxidizable auxiliary layer, forming a first mask over the covering layer, patterning the

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covering layer, the oxidizable auxiliary layer, the semiconductor intermediate layer, and the oxidizable current aperture layer using the first mask to form a mesa structure, oxidizing the mesa structure, thereby causing peripheral portions of the oxidizable current aperture layer and the oxidizable auxiliary layer to become oxidized, and further causing non-oxidized portions of the current aperture layer and the auxiliary layer to be self – aligned and self – scaled with respect to one another. Ueki, US 2003/0235226 teaches an oxidation process for forming the current aperture, but fails to teach forming any oxidizable auxiliary layer so that the non-oxidized portions of the current aperture layer and the auxiliary layer to be self – aligned and self – scaled with respect to one another during the oxidation process. Additionally, the art of record does not disclose or anticipate the above limitation in combination with other claim elements nor would it be obvious to modify the art of record so as to form a device including the above limitation.

Conclusion

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Asok K. Sarkar whose telephone number is 571 272 1970. The examiner can normally be reached on Monday - Friday (8 AM- 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William B. Baumeister can be reached on 571 272 1722. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Asok Kumar Sarkar

Asok K. Sarkar
November 17, 2005

Primary Examiner